

DOE-BES Final Report

Award Number: DE-SC0013082

Title: Kokes Award for the 24th North American Catalysis Society Meeting

Institution: The Pennsylvania State University, University Park, PA

Principal Investigator: Rioux, Robert M.

Overall NAM Summary

The 24th NAM was held in Pittsburgh, PA from June 14th-19th, 2015 at the David L. Lawrence Convention Center. The meeting's theme was "Catalysis at the Confluence of Science and Technology" with the meeting's logo (Figure 1) representing the confluence of the three rivers (Allegheny, Monongahela and Ohio) in Pittsburgh. The Pittsburgh-Cleveland Catalysis Society (PCCS) hosted the event, which featured:

- 3 plenary lectures (Houdry, Emmett, and Boudart Awards)
- 21 keynote presentations
- 465 oral presentations
- 592 poster presentations



Figure 1. Logo for the 24th NAM in Pittsburgh, PA in June 2015.

The conference drew 1,395 attendees, including 110 graduate student Kokes award winners and 108 exhibitors. Nearly 800 individuals attended the opening reception, which was held at the Pittsburgh History Center on June 14th. A record number (1,033) individuals attended the closing banquet held at the Westin Convention Center Hotel on June 18th, at which the 2014-2015 NACS award winners were honored, recently departed notables in the field were recognized and plans for NAM 25 (to be held in Denver, CO) were presented. The event also included a celebration of the 100th birthday of Irving Wender, the honorary chair of NAM24, who was present at the banquet with family, friends and former colleagues.

The organizing committee is summarized in Table 1.

<i>Function</i>	<i>Name</i>	<i>Affiliation</i>
Honorary Chair	Irving Wender	University of Pittsburgh
Chair	Andy Gellman	Carnegie Mellon
	Chunshan Song	Pennsylvania State University
	Götz Vesper	University of Pittsburgh
Treasurer	Dushyant Shekhawat	NETL
	Jan Lerou	Jan Lerou Consulting
	Shingo Watanabe	Johnson Matthey
	Lucas Dorazio	BASF

Scientific Program	Dady Dadyburjor	West Virginia University
	Michael Janik	Pennsylvania State University
	John Kitchin	Carnegie Mellon University
Poster Program	Elise Fox	SRNL
	Giannis Mpourmpakis	University of Pittsburgh
	Xinyi Deng	NETL
Secretary	James (Jim) Miller	Carnegie Mellon University
Local Arrangements	Karl Johnson	University of Pittsburgh
	Bryan Morreale	NETL
Website	John Keith	University of Pittsburgh
	Jeff Elks	BP
Program book	Uschi Graham	Topasol
Kokes Awards	Robert M Rioux	Pennsylvania State University
Exhibits	Paul Kester	Micromeritics
	Fan Shi	NETL

Kokes Award Background

The objective of the Richard. J. Kokes Travel Award program is to encourage the participation of students in the biennial North American Catalysis Society (NACS) Meetings. The Kokes Award covers a significant portion of the transportation, lodging, and conference registration costs. Eligible students must be enrolled at a North American university and need to present a paper at the meeting. The Kokes awardee will be required to contribute some time to the organizing committee to assist in meeting operations and to be present at the meeting during the entire time. Similar to the 23rd Kokes Award program, undergraduate students are also eligible for the 24th Kokes Award program.

Timeline

August 18, 2014 – Kokes Award application submission begins

October 20, 2014 – Deadline for application submission. A two week extension was granted for both abstract and Kokes Award application submission

February 2014 – Notification of Kokes Awards

The description of the Kokes Awards was provided on the official website (<http://www.nam24.org/conference/kokes-awards.html>).

Summary

The Pittsburgh-Cleveland Catalysis Society (PCCS) awarded 110 Kokes Awards. The Kokes Award program was highly successful and we were able to provide the highest number of travel award ever awarded to date. The award provides students an opportunity to attend the meeting, present either an oral or poster presentation of their research work, and to provide service to the

North American Catalysis Society (NACS) by participating in the organization and operation of the meeting. The latter was a prerequisite of the meeting, and each of the 110 students were diligent, timely and helpful to the staff of Meeting Solutions. Each student was required as part of the Kokes Award to complete two “tasks” assigned to them by the Meeting Solutions staff.

Financial support was provided by the National Science Foundation (NSF), Department of Energy (DOE), NACS (local organizing committee) and a generous donation from Dr. Michael Strem that was intended to be used specifically on Kokes Awards. The students acknowledge the generous support of the above donors with Thank You cards signed by all 110 students. A similar card was provided to Professor Enrique Iglesia (President of NACS and Theodore Vermeulen Professor in Chemical Engineering at the University of California, Berkeley). As Kokes award recipients, each student received in kind a total of \$1000 in order to offset the cost of registration (\$270, early registration fee), hotel accommodations (\$371.43), and travel allowance (\$358.57). Continuing a tradition started at the 23rd NAM in Louisville, we provided each student with a certificate signed by Enrique Iglesia (President of NACS) and Bruce Cook (Vice President of NACS) (see Appendix at the end of the report). A list of meeting co-chairs (Götz Vesper (University of Pittsburgh), Andrew Gellman (Carnegie Mellon University) and Chunshan Song (Pennsylvania State University)), treasurer (Dushyant Shekhawat (National Energy Technology Laboratory, NETL), Kokes Award chair (Robert M Rioux (Pennsylvania State University)) and honorary chair (Irving Wender) was also included on the certificate, along with the Kokes award recipient’s name.

Details of Funding and Award Amounts

Funds secured for the Richard J. Kokes Awards for previous meetings have been provided by NACS and the local organizing committee (i.e., host local club of meeting) and additionally supplemented with funds from NSF and DOE-BES. The Kokes Award committee was tasked with the writing of proposals to the NSF (managed by Dr. Robert McCabe, CBET Catalysis and Biocatalysis) and DOE-BES (managed by Dr. Raul Miranda, Catalysis Science). Funds were requested through proposals submitted by the Pennsylvania State University. The proposals were submitted in approximately December 2013 and we received notification of the awards from DOE-BES in January 2015 and NSF in late May 2015. Both the DOE and NSF funding amounts to cover expenses for 50 U.S.-university based students were invoiced by PCCS to Penn. State and paid in early July 2015.

The Richard J. Kokes Award committee with the help of the Organizing Committee was able to secure money from the DOE, NSF, Dr. Michael Strem, and the local organizing committee. Dr. Dushyant Shekhawat (24th NAM treasurer) was responsible for finances. Table 2 summarizes the dollar amounts received from the various sources. At the 2013 NACS board meeting, an increase in the NACS contribution to fund Kokes Awards at future NAMs from \$30,000 to \$35,000 was approved.

Table 2. Comparison of Kokes Award funding source and amount for the last five NAM Meetings (2007 – 2015). Data from previous meetings from the 23rd NAM report.

Funding Source	20 th NAM Houston	21 st NAM San Francisco	22 nd NAM Detroit	23 rd NAM Louisville	24 th NAM Pittsburgh
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	2007	2009	2011	2013	2015
NACS	\$30,000	\$30,000	\$30,000	\$30,000	\$35,000
NSF	\$20,000	\$20,400	\$25,000	\$25,000	\$30,000
DOE-BES	\$5,000	\$25,000	\$25,000	\$20,000	\$20,000
Michael Strem	--	--	--	--	\$20,000
Sub-total	\$55,000	\$75,400	\$80,000	\$75,000	\$105,000
Local OC	\$12,430	\$10,612	\$22,665	\$30,000	\$5,000
Total	\$67,430	\$86,612	\$102,665	\$105,000	\$110,000

Distribution of Awards

The geographic distribution of Kokes awards the award amount are summarized in Table 3. At the 24th NAM, we increased the number of Kokes Awards by 3%, the total funding level by ~5% and the average student award amount by ~2% compared to the 23rd NAM.

Table 3. Distribution of Kokes Awardees and average award level. Data from previous meetings from the 23rd NAM report.

Student Origin	20 th NAM	21 st NAM	22 nd NAM	23 rd NAM	24 th NAM
	Houston 2007	San Francisco 2009	Detroit 2011	Louisville 2013	Pittsburg 2015
US University	70	92	93	96	93
Canadian University	5	3	6	2	8
Mexican Universities	10	6	7	9	9
Total	85	101	106	107	110
Travel Award per student	\$760	~\$860	\$969	\$981	\$1000

There was a single issue associated with student visa from Canada. With the help of Meeting Solutions personnel (Ms. Jennifer Whiting and Ms. Jill Keffer), we were able to award another student from Canada with an award. This was the only visa related issue we had to deal with.

Students received their travel stipends (\$1000) along with Kokes award certificate on Thursday, June 18th.

Selection Process

The committee (Robert M. Rioux (chair)) received 200 applications with 110 offers made and 110 accepted (see Table 2). Students were able to apply for Kokes travel awards during the abstract submission process. Duplicate and incomplete applications were disqualified.

The awardees were chosen on merit-based guideline with some consideration of need-based criteria which enabled the Kokes Awards committee to ensure appropriate representation from underrepresented groups, including minorities and women, first-time attendees to the NAM meeting, and students of young faculty. The process included the peer-reviewed evaluation of the

student's submitted extended abstract, letter of recommendation from the student's adviser and the student's CV.

An alphabetical list of students who received a Kokes Award and participated in the entire meeting is shown below in Table 4.

Table 4. Complete alphabetical list of Kokes awardees, their home institution and country

Omar	Abdelrahman‡	Syracuse University	USA
Brenda	Acosta	Centro de Investigacion Científica y de Eucadió	Mexico
Payoli	Aich‡	University of Illinois, Chicago	USA
Juan Manuel	Alvaro	Universidad Autónoma Metropolitana-Iztapalapa	Mexico
Juan-Manuel	Arce-Ramos	Universidad Autónoma de San Luis Potosí	Mexico
Erasmus	Arriola	Universidad Autónoma Metropolitana-Iztapalapa	Mexico
Sandeep	Badoga	University of Saskatchewan	Canada
Rebecca A. L.	Baylon‡	Washington State University	USA
Cristihan	Carrillo§	University of New Mexico	USA
Fanglin	Che§	Washington State University	USA
Cha-Jung	Chen	University of Minnesota, Twin Cities	USA
Yuan	Chen‡	University of Michigan	USA
Tej	Choksi	Purdue University	USA
Stephen	Crowley	City College of New York, CUNY	USA
Yanran	Cui	Purdue University	USA
Yolanda A.	Daza§	University of South Florida	USA
John	Di Iorio	Purdue University	USA
Weijian	Diao	University of South Carolina	USA
Gloria Lourdes	Dimas Riveria	Universidad Autónoma de Nuevo León	Mexico
Thomas	DiProspero	St. John Fisher College	USA
Hieu	Doan§	University of Houston	USA
Laleh	Emdadi§	University of Maryland	USA
Guo Shiou	Foo	Georgia Institute of Technology	USA
Anshuman	Fuller	Ohio State University	USA
Pooneh	Ghasvareh	University of British Columbia	Canada
Sarika	Goel	University of California, Berkeley	USA
Ana Wendoline	Gutierrez	Instituto Mexicano del Petroleo	Mexico
Sabra	Hanspal§	University of Virginia	USA
Stanley	Herrmann	University of California, Berkeley	USA
Adam	Hoffman‡	University of California, Davis	USA
Bo	Hu	Illinois Institute of Technology	USA
Sean	Hunt‡	Massachusetts Institute of Technology	USA
Bahar	Ipek§	University of Delaware	USA
Yuewei	Ji‡	California Institute of Technology	USA
Xiao	Jiang	Pennsylvania State University	USA
Jennifer	Jocz§	University of Michigan	USA
Gregory	Johnson	University of California, Berkeley	USA
Samantha	Jones‡	University of Kentucky	USA
Alexandros	Karaiskakis	City College of New York, CUNY	USA
Patrick	Kelleher	Yale University	USA
Kamyar	Keyvanloo§	Brigham Young University	USA
Manjesh	Kumar	University of Houston	USA
Mengmeng	Li§	University of Houston	USA
Hui	Li‡	University of Notre Dame	USA
Yan	Li	Washington State University	USA

Jilei	Liu§	Tufts University	USA
Zongyuan	Liu	State University of New York at Stony Brook	USA
Ruchira	Liyanage	Wayne State University	USA
Mariana	López	Universidad Autónoma de San Luis Potosí	Mexico
Yongwu	Lu	Mississippi State University	USA
Helen	Luo‡	Massachusetts Institute of Technology	USA
Jason A.	Lupescu	University of Michigan	USA
Shaama	Mallikarjun Sharada§	University of California, Berkeley	USA
John	Matsubu‡	University of California, Riverside	USA
John	Matthiesen‡	Iowa State University	USA
Nicholas	McNamara	University of Notre Dame	USA
Max	Mellmer§	University of Wisconsin, Madison	USA
Alexander V.	Mironenko	University of Delaware	USA
Julio César	Morales Ortuño	Universidad Nacional Autónoma de México	Mexico
Aidan	Mouat	Northwestern University	USA
MyatNoeZin	Myint§	University of Delaware	USA
Arvind	Nanduri	Texas A&M University – Kingsville	USA
Hanieh	Nassiri	University of Alberta	Canada
Jennifer	Naumovitz§	Eastern Kentucky University	USA
Luan	Nguyen	University of Kansas	USA
Gina	Noh‡	University of California, Berkeley	USA
Daniel	Noon§	University of California, Los Angeles	USA
Kerry	O'Connell§	University of South Carolina	USA
Tzia Ming	Onn	University of Pennsylvania	USA
Marat	Orazov‡	California Institute of Technology	USA
Oscar	Oyola-Rivera	University of Puerto Rico – Mayagüez	PR
Christopher	Paolucci	University of Notre Dame	USA
Atish A.	Parekh‡	Purdue University	USA
Mar	Piernavieja Hermida‡	University of Alabama – Huntsville	USA
Anthony	Plauck	University of Wisconsin, Madison	USA
Felipe	Polo-Garzon‡	Clemson University	USA
Marc	Porosoff	Columbia University	USA
Zheng	Ren§‡	University of Connecticut	USA
Allison	Robinson	University of Colorado	USA
Carlos E.	Santolalla-Vargas	Universidad Autónoma Metropolitana- Iztapalapa	Mexico
Ajay	Sathe	Pennsylvania State University	USA
Thomas	Senftle‡	Pennsylvania State University	USA
Junnan	Shangguan	University of Toronto	Canada
Daming	Shi	University of Pennsylvania	USA
Atal	Shivare‡	University of Saskatchewan	Canada
Sreshtha	Sinha Majumdar	Ohio State University	USA
Mark	Sullivan‡	University of Minnesota, Twin Cities	USA
Micaela	Taborga Claire‡	Georgia Institute of Technology	USA
Timothy	Van Cleve	University of Michigan	USA
Luis D.	Virla	University of Calgary	Canada
Zi	Wang‡	Louisiana State University	USA
Thomas E.	Wood	University of Calgary	Canada
Yiqing	Wu	University of Maryland	USA
Zhuoran	Xu	University of Wisconsin, Madison	USA
Fang	Xu‡	State University of New York at Stony Brook	USA
Sara	Yacob	Northwestern University	USA
Wenjuan	Yan‡	University of Kansas	USA
Yali	Yao	University of Saskatchewan	Canada
Kehua	Yin	University of Virginia	USA
Jong Suk	Yoo‡	Stanford University	USA

Ying	Yu	Northwestern University	USA
Datong	Yuchi	Arizona State University	USA
Fan	Zeng	Kansas State University	USA
Changlin	Zhang‡	University of Akron	USA
Yunya	Zhang	University of South Carolina	USA
Peng	Zhao	Princeton University	USA
Qinghe	Zheng‡	Columbia University	USA
Yang	Zheng	University of Houston	USA
Yiteng	Zheng	Stevens Institute of Technology	USA
Minghui	Zhu‡	Lehigh University	USA

‡Students covered by NSF funds

§Students covered by DOE funds.

†Student did not appear in final Kokes Award list found in the Program Book. The program book had already been printed after this student was chosen for a Kokes Award due to another student's visa issues.

As required by DOE-BES terms of funding, funding provided by DOE were only used to fund students originating from universities/colleges in the United States. Students receiving funds specifically from DOE are marked with a '§'. The list of students include 10 male and 10 female students.

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